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June 1, 2020

Emily Halter EPA Headquarters Office of Water, Office of Wastewater Management (4203M) 1200 Pennsylvania Avenue NW Washington, DC 20460

Via Online Submission to:

https://www.regulations.gov/comment?D=EPA-HQ-OW-2019-0372-0001

RE: Comments of Conservation Law Foundation, Inc. on U.S. EPA's Proposed 2020 MSGP

Docket ID # EPA-HQ-OW-2019-0372

Dear Ms. Halter and Office of Water, Office of Wastewater Management:

Conservation Law Foundation ("CLF") submits this letter, and attached Declarations of Dr. Wendi Goldsmith and Edward A. Thomas, Esq., in response to the Environmental Protection Agency's ("EPA") March 2, 2020 request for comment on its Proposed 2020 Multi-Sector General Permit.¹ CLF is a nonprofit organization devoted to protecting New England's environment for the benefit of all people. For over half a century, we have used law, science, and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy.

As described in detail herein, Section 2.1.1.8 of the Proposed MSGP concerning preventing "stormwater discharges from major storm events that cause extreme flooding conditions" improperly limits permittees' existing duties to design, construct, operate, and maintain their facilities in a manner that avoids flooding and damage from the reasonably anticipated impacts of climate change, as one among other weather driven factors, during the facilities' design life. The 2015 MSGP adopted a "good engineering practices" standard for developing pollution control measures and preparing of the Stormwater Pollution Prevention Plan ("SWPPP"). 2015 MSGP §§ 2.1 ("[T]he selection, design, installation, and implementation of [] control measures must be in accordance with good engineering practices" (emphasis added)); 5.1 ("The SWPPP shall be prepared in accordance with good engineering practices and to industry standards."). To comply with these and other provisions of the 2015 MSGP, permittees must develop

¹ CLF also expressly incorporates as part of this letter all of the sources and materials cited in this letter and attached declarations. A complete list of the sources and materials included herein can be found in the attached Bibliography and Appendix.



enforceable measures to address the risks of flood-induced contaminated stormwater discharges and chemical disasters as a component of their legally binding SWPPP and to prevent violations of other effluent limits as well as water quality standards. As explained below and in the attached Declarations, good engineering standards dictate that durable infrastructure be designed to withstand anticipated weather and climate-related risks, including the risks posed by climate-change-induced severe weather, sea level rise, and storm surge.

EPA should not adopt the proposed language of Section 2.1.1.8 of the proposed 2020 MSGP because it appears to unlawfully narrow the scope of necessary consideration of flood risk from the 2015 version in violation of the Clean Water Act's ("CWA") antibacksliding provision. Accordingly, the Agency should strengthen the proposed language in Section 2.1.1.8 by underscoring existing obligations requiring applicants to use good engineering practice, disclose information in their possession, consider all reasonably available data and information, and thoroughly document present-day and future flood risks, such as hurricane storm surge and high tides, extreme precipitation, known and committed sea level rise, and historic flood incidents. EPA should further underscore that applicants must include specific enforceable design, operation, and maintenance measures in their SWPPPs to fully address identified risks of pollutant discharges. Relying upon the self-reported data and information contemplated in this proposal, EPA should evaluate the universe of permitted facilities at risk of flooding and prioritize inspections, outreach, technical assistance, and compliance resources to the most vulnerable facilities.

I. Climate Change Poses an Imminent and Certainly Impending Threat to Industrial Infrastructure Recognized by Government, Industry, and Engineers Alike

There is widespread consensus that climate change has already caused dramatic changes in the frequency and severity of precipitation and major storms, including severe tropical storms responsible for storm surges and flooding, has caused and contributed to sea level rise, and has dramatically shifted air, water, and surface temperatures. Increased impacts in the near and long-term are already guaranteed as a result of emissions to-date and will be severely exacerbated by continued reckless emissions of greenhouse gases. It is beyond any reasonable dispute that climate disruption poses severe risks to riverine and coastal infrastructure. The devastation wrought in recent years by Hurricane Harvey and Superstorm Sandy spotlight the dangers to private and public infrastructure throughout the country. For example, among many other disastrous impacts of the storm, the Arkema facility in Houston caught fire and exploded after flood waters breached the facility during Hurricane Harvey. The Shell facility in Sewaren, New Jersey spilled 378,000 gallons of oil after tidal surge damaged its bulk storage tanks during Superstorm Sandy. The devastation caused by releases of stored petroleum products from the Murphy Oil facility in New Orleans as a result of Hurricane Katrina still resonates as a signal example as well.



The risks and costs to industrial and community infrastructure have been brought starkly into the public eye through reports by the Union of Concerned Scientists [Rising Tides Rising Risks] and by the Center for Climate Integrity as well. See generally The Center for Climate Integrity Resilient Analytics, High Tide Tax: The Price to Protect Coastal **Communities** from Rising (June available Seas 2019), https://climatecosts2040.org/files/ClimateCosts2040 Report.pdf. These risks have been underscored by industry as well. See Effectively addressing climate risk through adaptation Energy Gulf Coast (Oct. 2010), available for the https://www.entergy.com/userfiles/content/our community/environment/GulfCoastA daptation/report.pdf

The flooding risks to infrastructure are well recognized by the United States government, as detailed in the Goldsmith Declaration. For example, the Army Corps of Engineers—the preeminent engineering organization in the country—issued a regulation in 2013 entitled "Incorporating Sea Level Change in Civil Works Programs." That regulation states:

[Sea level change] can cause a number of impacts in coastal and estuarine zones, including changes in shoreline erosion, inundation or exposure of low-lying coastal areas, changes in storm and flood damages, shifts in extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems.

Army Corps of Engineers, Regulation No. 1100-2-8162, at B-1 (Dec. 31, 2013), available at

https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulation s/ER 1100-2-8162.pdf. Indeed, the Army Corps of Engineers acknowledges that sea level change is likely to impact coastal projects, and "[a]s a result, managing, planning, engineering, designing, operating, and maintaining for [sea level change] must consider how sensitive and adaptable 1) natural and managed ecosystems and 2) human and engineered systems are to climate change and other related global changes." *Id.* at 2.

The EPA itself has similarly recognized the danger even before drafting the major storm provision in Section 2.1.1.8. In its Framework for Protecting Public and Private Investment in Clean Water Act Enforcement Remedies, EPA stated: "Extreme weather events, such as storms, floods, and droughts, pose significant risks to water infrastructure and water pollution control measures, and these risks are likely to affect the ability of regulated entities to comply with CWA requirements over time" and that, in appropriate circumstances, "EPA will require as part of the remedy that regulated entities implement resilience and adaptation measures based on the results of . . . vulnerability assessments and the expected useful life of the infrastructure in question, as needed to ensure long-term compliance with the CWA." *Id.* at 6. It concludes, "[I]t is important for each



regulated entity to assess its own vulnerability and consider a range of options that address its particular obligations and goals as well as resource challenges." *Id.* at 9.

The regulated community similarly recognizes the risks to their infrastructure poses by climate change. Corporations—from oil majors, chemical companies, and Wall Street—have all issued statements describing the threats posed by climate-change induced severe weather. *See* Goldsmith Decl. ¶¶ 22-34. Similarly, the engineering profession responsible for designing the infrastructure has developed specific guidelines for incorporating climate resilience into that infrastructure. *See* Goldsmith Dec. ¶¶ 35-47.

As a result of this consensus, "any asset/project owner, and by extension any reasonable engineer tasked with design and/or operations of durable infrastructure and other complex facilities, will find it necessary to analyze the potential anticipated climate-change-related threats to the asset throughout its design life." Goldsmith Dec. ¶ 49.

II. The 2015 MSGP Requires Permittees to Consider the Elevated Risk of Flooding Posed by Climate Change Impacts

The 2015 MSGP already requires permittees to construct their facilities in a manner that avoids flooding and damage from the reasonably anticipated impacts of climate change during the facilities' design life by imposing a "good engineering practices" standard to the facilities' control measures and SWPPP preparation.

Section 2.1 of the 2015 MSGP requires permittees to "select, design, install, and implement control measures . . . to *minimize* pollutant discharges" and to do so "in accordance with *good engineering practices* and manufacturer's specifications." 2015 MSGP ¶ 2.1 (emphasis added). The 2015 MSGP further defined minimize to mean "reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable *in light of best industry practice*." 2015 MSGP § 2 (emphasis added). With these provisions, the 2015 MSGP expressly incorporates the professional standard of an engineer into the permit's control measures requirements. As detailed in Dr. Goldsmith's Declaration, the control measures required by the 2015 MSGP are intended to minimize the potential for contamination of stormwater, stop the discharge of contaminated stormwater, and minimize the potential for any non-stormwater discharges from the facility. Goldsmith Decl. ¶ 56 (quoting 2015 MSGP § 2.1).

In light of the scientific consensus on the current and future increasingly severe precipitation and storms, "[b]y requiring permittees to use 'good engineering practices' to develop and implement control measures, the MSGP requires industrial facilities to assess their vulnerabilities in light of climate change, develop engineering design plans to adequately address those vulnerabilities, and ultimately implement measures that will



protect each facility and other surrounding communities from contamination from this facility." Goldsmith Dec. ¶ 61.

III. The permit conditions and standards in Section 2.1.1.8 and Request for Comment 8 of the proposed 2020 MSGP are less stringent and therefore unlawful under the Clean Water Act's anti-backsliding prohibitions. 33 U.S.C. § 1342(o).

The CWA's anti-backsliding provision prohibits permits from having less stringent effluent limitations than the previous permit. *See* 33 U.S.C. § 1342(o). Section 402(o)(3) of the CWA specifically provides an absolute limitation on backsliding:

This section of the CWA prohibits the relaxation of effluent limitations in all cases if the revised effluent limitation would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. Thus, even if one or more of the backsliding exceptions outlined in the statute is applicable and met, CWA section 402(0)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. The requirement affirms existing provisions of the CWA that require effluent limitations, standards, and conditions to ensure compliance with applicable technology and water quality standards.

U.S. ENVTL. PROT. AGENCY, *NPDES Permit Writers' Manual*, at 7-4 (Sept. 2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_07.pdf.

The language proposed by EPA in Section 2.1.1.8 violates Section 402(0) "by narrowing the scope of the control measures to exclude consideration of all of climate change related impacts, including sea-level rise and storm surge, and by basing a facility's risk designation solely on Federal Emergency Management Agency ('FEMA') flood risk assessments." Goldsmith Dec. ¶ 72; see also Thomas Dec. ¶ 23. As discussed above and in Dr. Goldsmith's and Mr. Thomas' declaration, the 2015 MSGP requires consideration of all climate change impacts and requires a prospective risk assessment based on good engineering practices. Sole reliance on base flood elevations from often-outdated flood insurance maps not intended for regulatory use and that fail to consider climate change impacts is not consistent with good engineering practice and would simply guarantee disastrous pollutant discharges and public health and safety consequences. Accordingly, the permit conditions and standards in the 2020 MSGP are less stringent than those in the 2015 Permit and adoption of the language proposed in Section 2.1.1.8 of the 2020 MSGP is in violation of Section 402(0) of the CWA.



A. The proposed use of temporary measures to accommodate major storm events impermissibly weakens the permit because it assumes that facilities will flood, thereby implying more permanent measures are unnecessary.

As Dr. Goldsmith stated in her declaration, "Sections 2.1.1.8(c)—(f) weaken the 2020 MSGP by identifying temporary measures to be taken only in the event of an oncoming storm. Such temporary measures presuppose that i) storms will be infrequent enough to make temporary measures sustainable on a regular basis, ii) facilities will be able to predict in advance and with certainty which storms will pose a flooding risk, and iii) permanent infrastructure (such as warehouses for storing or roads for transporting necessary materials or equipment) is already out of harm's way in the event of a flood." Goldsmith Dec. ¶84. As a result, Section 2.1.1.8 apparently takes for granted that facilities will be flooded by severe storms and does not address methods for preventing flooding.

However, building standards based on good engineering practice require permitted facilities be designed to ensure that flood waters cannot enter a facility, *e.g.*, by raising the facility above the anticipated flood level. Engineers designing industrial facilities cannot satisfy their standard of care by assuming that facilities will flood and merely taking efforts to ensure that structures don't float away, especially when those facilities contain substances that are hazardous to human health or the environment. In fact, many industrial sites contain extensive soil contamination or other contaminants that can be mobilized by flood waters if allowed to enter the facility. As was required in the 2015 MSGP, engineers must design facilities to avoid any reasonably anticipated potential for flooding throughout the design life of the facility. Therefore, to avoid prohibited backsliding, Section 2.1.1.8 should include a provision for control measures that prevent flood waters from entering the facility for any reasonably anticipated flooding that might occur during the design life of the facility. Failing to do so impermissibly weakens the MSGP and violates Section 402(0) of the CWA.

B. The manner in which the 2020 MSGP proposes to rely on FEMA maps unlawfully weakens effluent limitations by narrowing the universe of flood data that must currently be considered under the 2015 MSGP.

Proposed Section 2.1.1.8 constrains the flood-risk analysis solely to base flood elevations (BFE) "shown on the Federal Emergency Management Agency's Flood Maps and on the flood profiles, which can be access through https://msc.fema.gov/portal/search." Proposed MSGP at Section 2.1.1.8, n.5. As Mr. Thomas states in his declaration, "The use of the Base Flood Elevation (BFE) indicated on a FEMA Flood Insurance Rate Map (FIRM) without further site specific based engineering and research is not adequate for most engineering design and construction purposes, and especially not in cases



understood to involve risk to human life and health as well as damage to clean water." Thomas Dec. ¶ 23.

EPA is well aware that FEMA flood hazard designations are insufficient to capture present-day coastal flood risks, which include hurricane storm surge and nuisance or 'sunny-day' tidal flooding, to sites discharging industrial stormwater. *See generally*, Highfield, Wesley E., Norman, Sarah A., *et al.*, *Examining the 100-Year Floodplain as a Metric of Risk*, *Loss*, *and Household Adjustment*, Risk Anal. (May 22, 2012). Further, the underlying models used by FEMA to identify flood risks for flood insurance rate development were never intended for use in regulatory programs and are based upon retrospective data. *See* Thomas Dec. ¶¶ 24-32. Therefore, FEMA designations are outdated in many cases and even across entire regions in some instances. *See id.* ¶ 25.

Moreover, the proposed use of the one percent flood level or BFE as calculated by FEMA also ignores Executive Order 11988 ("EO 11988"). EO 11988 applies to among other things, "Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities." EO 11988, 42 Fed. Reg. 26951 (May 24, 1977) at Section 1. It further provides that

[e]ach agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.

EO 11988 § 2(c). As described in Mr. Thomas' Declaration, guidance for application of EO 11988 requires floodproofing and planning to at least the .2 percent or 500-year flood level for critical actions like permitting facilities that will discharge pollutants harmful to human health and the environment if flooded. Thompson Dec. ¶¶ 33-36; see also FEMA, Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, available at: https://www.fema.gov/media-library/assets/documents/110377; FEMA, Further Advice Executive Order 11988 Floodplain Management. on 8. https://www.gsa.gov/cdnstatic/Advice EO11988.pdf.

Concerns about potential repercussions from reliance on FEMA designations alone are especially grave given that climate change has resulted in a rise in mean sea level of 8–9



inches "since 1880, with about a third of that coming in just the last two and a half decades." Lindsey, Rebecca, Climate Change: Global Sea Level, NOAA (Nov. 19, 2019), available at https://www.climate.gov/news-features/understanding-climate/climatechange-global-sea-level. Climate change has also increased the frequency and intensity of severe weather and floods to levels far in excess of historic levels. For example, as Dr. Goldsmith discussed in her declaration, "Hurricane Harvey was a 500-year storm (in the traditional historic context) that devasted the Houston area, a slow-moving onslaught of rain that caught the city unawares and wreaked havoc on Houston homes and industrial facilities alike. Yet Harvey was not the first such storm to pass through Houston in 500 years. In fact, Harvey was the third such storm in three years to bombard the area, and it was Houston's very reliance on the 1-in-500 year probability that led the city to inadequately prepare, leading to unnecessary and disastrous consequences." Goldsmith Dec. ¶ 74 (citing Dara Lind, The "500-year" flood: why Houston was so underprepared for Hurricane Harvey, Vox (Aug. 28, 2017), https://www.vox.com/science-and-health/ 2017/8/28/16211392/100-500-year-flood-meaning.); see also Blake, Eric S. & Zelinsky, David, A., Nat'l Hurricane Ctr., Tropical Cyclone Report: Hurricane Harvey, 9 (2018), available at https://www.nhc.noaa.gov/data/tcr/AL092017 Harvey.pdf. (stating total damages from Harvey have been difficult to calculate in part because a majority of the residential flood loss claims came from outside the 500-year flood plain).

These climate change effects are expected to continue to increase for the foreseeable future. Moreover, as seen with Harvey in Houston, dramatically intensified development of impervious surfaces over the last several decades further confounds simple reliance on the FEMA designations. See Satija, Neena & Collier, Kiah, Boomtown, Flood Town, TEXAS TRIBUNE & **PROPUBLICA** (Dec. 2016). available https://projects.propublica.org/houston-cypress/. ("As wetlands have been lost, the amount of impervious surface in Harris County[, Texas] increased by 25 percent from 1996 to 2011," said Sam Brody, a Texas A&M University at Galveston researcher. "And there's no way that engineering projects or flood control regulations have made up for that change, he said."). As a result, currently applicable spatial flood hazard designations significantly underestimate present-day risk. Indeed, the Army Corps of Engineers' Regulation 1100-2-8162 notes that historic data on water levels is insufficient, stating:

[A]nalysts shall consider what effect changing relative sea level rates could have on design alternatives, economic and environmental evaluation, and risk. The analysis shall include, as a minimum, a low rate that shall be based on an extrapolation of the historical tide gauge rate, and intermediate and high rates that include future acceleration of [global mean sea level].

Army Corps of Engineers, Regulation No. 1100-2-8162, at B-6. Reliance on FEMA BFEs alone in Section 2.1.1.8 and Request for Comment 8 artificially constrains the 2015 MSGP requirements and would be arbitrary and unreasonable given current scientific consensus



regarding both the insufficiencies of the FEMA maps and the dramatic current and certainly impending effects of climate change.²

C. The 2020 MSGP does not require consideration of ALL climate change-related impacts and therefore relaxes effluent limitations in violation of the anti-backsliding provision.

Section 2.1.1.8 of the 2020 MSGP is silent on climate change and its associated impacts and therefore unlawfully weakens effluent standards by narrowing the focus of preparedness to "major storm events that cause extreme flooding conditions." "[T]his language not only implies facilities need not consider prospective increases in risk based on increased frequency and severity of storms and sea-level rise, but, combined with the suggestion that FEMA FIRMs are an accurate measure of current risk, the language indicates that risk calculation based on historical data is sufficient to protect facilities, surrounding communities, and the environment in the event of a storm." Goldsmith Dec. ¶82.

Dr. Goldsmith further elucidates that "even if the language could be read to include consideration of the increased frequency of storms, both major and minor, and the increasingly severe nature of storms, the 2020 MSGP still falls short of the 2015 version because it excludes consideration of sea-level rise and storm surge flooding. Storm surge flooding exacerbates and contaminates stormwater by infiltrating and flooding secondary containment structures and drainage areas, carrying debris that clogs drainage areas and creates backup, and potentially mobilizing heavy objects which may then destroy control measures and/or other structures." Id. at \P 83. This narrowing of the permit's scope necessarily creates less stringent effluent limitations than the 2015 MSGP and therefore constitutes prohibited backsliding.

IV. Necessary Improvements to Avoid Prohibited Backsliding

Regardless of whether the proposed permit changes substantively impact permittees' duties, CLF appreciates that EPA recognizes the importance of severe weather and flooding risks to industrial infrastructure and is attempting to address the issue expressly in the Proposed MSGP. However, as discussed *supra*, the proposed changes hinder rather than further that purpose. To make the 2020 MSGP accord with the CWA's anti-

² This is not to say that FEMA maps serve no purpose whatsoever; CLF is simply highlighting the limited nature of the maps as an engineering tool, especially when used in a vacuum with no additional information. As discussed below, FEMA designations represent basic information that must be considered when identifying present-day flood risks and risk over the design life of a facility.



backsliding provision, as well as with good science and engineering practice, below are necessary additions to carry out that purpose.

EPA should require applicants to report identified flood risks in their NOI application following consultation with resources and data sets applicable to present and future flood risks as discussed below. As with the prior permit, the draft permit requires applicants to document their consideration of the design and selection of control measures in their SWPPP (Part 6.4), which includes consideration of the risks of major storm events and extreme flooding conditions. Consistent with good engineering practice and in order to support meaningful evaluation of an applicant's consideration of potential major storm and flood risk, EPA should make explicit that applicants must identify 1) the specific present-day flood risks and reasonably foreseeable flood risks over the design life of their facilities; 2) all of the information and analysis applicants have in their or their agents' possession relevant to flood risk; and 3) information and analysis relied upon for consideration and implementation of control measures to address identified risks.

EPA should also require applicants to self-designate exposure to flood risk if any part of their facility's footprint is located within a geographic area at risk of flooding based upon the best available flood projection information and models for that area. This must include consideration of all reasonably available data and information consistent with good engineering practice. For example, EPA should make explicit that applicants must, at a bare minimum, identify areas designated by FEMA as in or adjacent to a flood risk zone with a 0.2 percent or greater annual chance of flooding. Despite their underestimation of risk and flaws, the FEMA designations of statistical probability are based upon streamflow measurements and coastal flooding data, which are available for a widespread geography.

EPA should also make explicit that applicants must self-designate exposure to flood risk if any part of their facility's footprint is located within geographic areas that are projected by NOAA to be exposed to present-day or future risk of dry-weather tidal flooding, including so-called 'king tides,' 'sunny-day,' recurrent, and nuisance flooding. Tidal flooding is already impacting coastal regions, including industrial areas and public infrastructure such as storm sewers and roadways. NOAA has identified coastal areas that are exposed to present-day nuisance flooding, based upon decades of observed data. The risks of coastal nuisance flooding are also increasing due, for example, to observed land subsidence and sea level rise. The coincidence of high tidal conditions with major storms and related flood conditions also has the potential to exacerbate the risk of harm to industrial sites. Therefore, EPA should make clear that applicants must identify a site's risk of exposure to nuisance flooding (in accordance with NOAA modeled projections) and consider accordingly the necessary control measures to account for those risks.

Nevertheless, identification of flood risks based solely upon the aforementioned analyses and designations will not adequately reflect the universe of present-day flood risk at



MSGP-covered facilities which are typically comprised of infrastructure with a long service life. There is no substitute for site-specific flood data and future data-driven projections; accordingly, EPA should also require applicants to self-designate exposure to flood risk if any part of their facility has been flooded within the last 20 years. The past incidence of flooding is another indicator of present-day risk and should be disclosed by applicants and should also serve as a mandatory basis for selection and design of control measures.

Additionally, Section 2.1.1.8 should make clear that the standard for appropriate control measures depends on the quantity and characteristics of pollutants housed at the site. The current text of Section 2.1.1.8 makes no attempt to differentiate control measures based upon the potential harm to human health and the environment that could result from a release at different types of facilities. For example, the potential ecological consequences of flooding at a sawmill are very different from the potential consequences of flooding at a petrochemical facility or a superfund site. Section 2.1.1.8 should expressly include a provision requiring stronger control measures when the facility is handling large amounts of potentially hazardous materials and constituents.

The MSGP should be explicit that permittees must consider a range of alternatives when designing, operating, and maintaining their facilities throughout its design life to prevent discharging pollutants in the event of flooding. The characteristics of each individual facility, including its location, the type of pollutants maintained, the amount of impermeable surface nearby, to name but a few, will determine the scope of choices available, from building floodgates for use in heavy storms, to running a facility outside "the rainy" season only, to building a new facility away from coastal and riverine resources to abate the flood risk dramatically. See Goldsmith Dec. ¶ []. The MSGP must require each permitted facility to develop a resilience plan, using the best data available consistent with good engineering practice, to assess its flood risk and appropriate flood mitigation options in both the near and long-term. In some instances, it must be acknowledged that facilities located in harm's way pose too great a danger to the surrounding area and community and retreat will be necessary in order to meet environmental standards and protect the public health, safety, and welfare. See id. ¶[]. In these situations, the MSGP must require the permittee to consider i) the range of possible floodproofing mechanisms; ii) how those mechanisms apply to the facility; and iii) implement those measures in a way that minimizes risk over the permit term but ultimately considers a permanent, climate resilient solution.

The MSGP must also require that all facilities maintain safe, dry access via a land route throughout flooding events. Ingress and egress to implement emergency measures within the confines of a facility is fundamental to assuring that pollutants will not be discharged during flood events and to protect critical infrastructure. Even if required flood-proofing measures are fully implemented, a lack of dry access to the facility dramatically increases the risk that discharges and releases will occur. For example, a facility located significantly



below the base flood elevation and hundreds of yards away from the inland extent of a readily anticipated flood event might end up completely surrounded by flood or surge waters with large waves and dangerous currents. While a desktop design exercise might show adequate facility design to "flood proof" the facility, the chaotic reality of such severe events makes it absolutely critical to have safe, dry access to implement response actions during such events to prevent catastrophic pollutant releases.

If EPA adopts the proposed requirements described above in the final MSGP, as it must to prevent backsliding, then the Agency will have more robust site-specific information and analysis with which to deliver compliance assistance to flood vulnerable facilities during the permit cycle, while also collecting valuable nation- and sector-wide data for the purpose of revising future permit requirements responsive to flood risks.

CONCLUSION

For the reasons described above, the proposed Section 2.1.1.8 improperly narrows the duties imposed on permittees by the "good engineering practice" standard and needs to be revised to avoid impermissible backsliding.

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BIBLIOGRAPHY

<u>Cases</u>

Federal Defendants' Objections to Findings and Recommendation of Magistrate Judge, *Juliana* v. *United States*, 6:15-cv-01517-TC, ECF No. 74 (D. Or. May 2, 2016).

Statutes and Regulatory Documents

33 U.S.C. § 1342(o)

Executive Order 11988, 42 Fed. Reg. 26951 (May 25, 1977)

United States Army Corps of Engineers. "Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Designs, and Projects" (Sept. 10, 2018), https://www.wbdg.org/ffc/dod/engineering-and-construction-bulletins-ecb/usace-ecb-2018-14

United States Army Corps of Engineers. "Incorporating Sea Level Change in Civil Works Programs." Engineer Regulation No. 1100-2-8162. https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/ER_1100-2-8162.pdf?ver=2019-07-02-124841-933.

United States Army Corps of Engineers. "North Atlantic Coast Comprehensive Study (NACCS) Coastal Storm Model Simulations: Waves and Water Levels." Report no. 15-14. ERDC/CHL TR. U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory, 2015. Accessed June 1, 2020.

https://usace.contentdm.oclc.org/digital/collection/p266001coll1/id/3681/.

United States Environmental Protection Agency (EPA). "Climate Impacts in the Northeast." EPA. Last modified January 19, 2017. https://19january2017snapshot.epa.gov/climate-impacts/

United States Environmental Protection Agency (EPA). "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule." 74 Fed. Reg. 66, 496 (Dec. 15, 2009). https://www.govinfo.gov/content/pkg/FR-2009-12-15/pdf/E9-29537.pdf.

United States Environmental Protection Agency (EPA). "Framework for Protecting Public and Private Investment in Clean Water Act Enforcement Remedies." EPA, n.d. https://www.epa.gov/sites/production/files/201612/documents/frameworkforprotectingpublicand-privateinvestment.pdf.

United States Environmental Protection Agency. "NPDES Permit Writers' Manual." (2015) https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_07.pdf.

United States Federal Emergency Management Agency (FEMA). "Building Higher in Flood Zones: Freeboard – Reduce Your Risk, Reduce Your Premium." FEMA, n.d. https://www.fema.gov/media-library-data/1438356606317-dd1d037d75640588f45e2168eb9a190ce/FPM_1-pager_Freeboard_Final_06-19-14.pdf.

United States Federal Emergency Management Agency (FEMA), "Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input." (Oct. 2015) https://www.fema.gov/media-library/assets/documents/110377

United States Federal Emergency Management Agency (FEMA). "Further Advice on Executive Order 11988 Floodplain Management." FEMA, at 8. https://www.gsa.gov/cdnstatic/Advice EO11988.pdf.

United States Federal Emergency Management Agency (FEMA), DHS. "Updates to Floodplain Management and Protection of Wetlands Regulations To Implement Executive Order 13690 and the Federal Flood Risk Management Standard." 83 Federal Register 9473 (March 6, 2018). https://www.federalregister.gov/documents/2018/03/06/2018-04495/updates-to-floodplain-management-and-protection-of-wetlands-regulations-to-implement-executive-order.

United States Federal Interagency Floodplain Management Task Force. "A Unified National Program for Floodplain Management," (1994), https://www.fema.gov/media-library-data/20130726-1733-25045-0814/unp_floodplain_mgmt_1994.pdf

United States Global Change Research Program. "The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment." https://health2016.globalchange.gov/.

United States Global Change Research Program. "Third National Climate Assessment." 2014. https://www.globalchange.gov/nca3-downloads-materials.

United States Government Accountability Office. "Climate Information: A National System Could Help Federal, State, Local, and Private Sector Decision Makers Use Climate Information." GAO-16-37 (November 2015). https://www.gao.gov/assets/680/673823.pdf.

United States National Oceanic and Atmospheric Administration (NOAA) and United States National Weather Service. "National Hurricane Center Tropical Cyclone Report: Hurricane Harvey (17 August – 1 September 2017)." Report no. AL092017. 2018. https://www.hsdl.org/?abstract&did=807581.

Secondary Sources

Adams-Schoen, Sarah J. & Thomas, Edward A. "A Three-Legged Stool on Two Legs: Federal Law Related to Local Climate Resilience Planning and Zoning." 47 URB. LAW 3 (Sum. 2015). http://nhma.info/wp-content/uploads/2016/02/UL-47-3 08Adams-Schoen-Thomas.pdf.

AECOM. "Press Release: Climate change and adaptation experts detail strategies in preparing for climate-related hazards and disasters." ASCE, June 25, 2019. https://aecom.com/press-

releases/climate-change-and-adaptation-experts-detail-strategies-in-preparing-for-climate-related-hazards-and-disasters/.

America's Energy Coast, America's Wetland Foundation, and Entergy Corp. "Effectively addressing climate risk through adaptation for the Energy Gulf Coast." Adaptation Clearinghouse, October 2010. https://www.adaptation-for-the-energy-gulf-coast.html.

Arkema. "COP21: Arkema is Committed to Climate." Arkema. http://www.arkema.com/en/social-responsibility/cop21/.

ASCE. "Policy Statement 360 - Impact of Climate Change." American Society of Civil Engineers (ASCE). https://www.asce.org/issues-and-advocacy/public-policy/policy-statement-360---impact-of-climate-change/.

ASCE. "2017 Infrastructure Report Card: America's Infrastructure Grade." American Society of Civil Engineers (ASCE). https://www.infrastructurereportcard.org/americas-grades/.

ASTM International, Standard E3032-15: Standard Guide for Climate Resiliency Planning and Strategy (2016), in *Appendix at Exhibit 2*.

Bank of England. "A framework for assessing financial impacts of climate change." Bank of England: Prudential Regulation Publications, May 2019. www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/2019/a-framework-for-assessing-financial-impacts-of-physical-climate-change.pdf.

Bank of England. "Climate change: why it matters to the Bank of England." Bank of England. https://www.bankofengland.co.uk/knowledgebank/climate-change-why-it-matters-to-the-bank-of-england.

Bayer. "Bayer Sustainability Report 2019." Bayer: Sustainability Report, February 27, 2020. www.bayer.com/en/sustainability-reports.aspx.

BlackRock. "Sustainability as BlackRock's New Standard for Investing." BlackRock. https://www.blackrock.com/corporate/investor-relations/blackrock-client-letter.

BlackRock, Larry Fink. Letter, "A Fundamental Reshaping of Finance," n.d. https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter.

Blake, Eric S. & Zelinsky, David A., Nat'l Hurricane Ctr. "Tropical Cyclone Report: Hurricane Harvey." (2018). https://www.nhc.noaa.gov/data/tcr/AL092017_Harvey.pdf.

Center for Climate Integrity (CCI). "High Tide Tax: The Price to Protect Coastal Communities from Rising Seas." CCI Resilient Analytics, 2019. https://www.climatecosts2040.org/files/ClimateCosts2040 Report-v4.pdf. D'Angelo, Chris. "Climate Change Is Fueling Stronger Hurricanes, Federal Study Finds." *Huffington Post*, May 19, 2020. https://www.huffpost.com/entry/hurricanes-climate-change-noaa-study n 5ec3e9ecc5b68a8b77d88276?guccounter=1.

DuPont. "DuPont de Nemours, Inc. Statement on Climate Change." DuPont. https://www.dupont.com/position-statements/climate-change.html.

Exponent. "Extreme-Weather-Related Risk Management." Exponent, 2018. https://www.exponent.com/knowledge/thought-leadership/2018/12/extremeweatherrelated-risk-management/?pageSize=NaN&pageNum=0&loadAllByPageSize=true.

ExxonMobil. "Energy and Carbon -- Managing the Risks." ExxonMobil, n.d. http://www.lawandenvironment.com/wp-content/uploads/sites/5/2014/04/Report-Energy-and-Carbon-Managing-the-Risks1.pdf.

Geosyntec. "Resilience and Adaptation." Geosyntec. https://www.geosyntec.com/markets/resilience-and-adaptation.

Goldstein, A., Turner, W.R., Gladstone, J. *et al.* "The private sector's climate change risk and adaptation blind spots." NATURE CLIMATE CHANGE 9, 18–25 (2019). https://www.nature.com/articles/s41558-018-0340-5.

Gramling, Carolyn. "Federal maps underestimate flood risk for tens of millions of people, scientists warn." SCIENCENEWS, December 13, 2017.

 $\frac{https://www.sciencenews.org/article/federal-maps-underestimate-flood-risk-tens-millions-people-scientists-warn.}{}$

Hasemyer, David, Song, Lisa, & Banerjee, Neela. "Exxon: The Road Not Taken." INSIDECLIMATE NEWS, September 16, 2015.

 $\underline{https://insideclimatenews.org/news/15092015/Exxons-own-research-confirmed-fossil-fuels-role-in-global-warming}.$

Jupiter. "Turning Risk Into Opportunity: Visionary Customers Take Action to Address Future Peril." Jupiter. https://jupiterintel.com/customers/.

Kossin, James P., et al., "Global increase in major tropical cyclone exceedance probability over the past four decades," PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (Apr. 10, 2020), in *Appendix at Exhibit 1*.

Lind, Dara. "The '500-year' flood, explained: why Houston was so underprepared for Hurricane Harvey." Vox, August 28, 2017. https://www.vox.com/science-and-health/2017/8/28/16211392/100-500-year-flood-meaning.

Lindsey, Rebecca. "Climate Change: Global Sea Level." NOAA (Nov. 19, 2019). https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level.

Milly, P.C.D., Betancourt, Julio, *et al.* "Stationarity is Dead: Whither Water Management?" 319 SCIENCE 5863, 573–74 (Feb. 1, 2008).

National Academies of Sciences, Engineering, and Medicine. "Improving the EPA Multi-Sector General Permit for Industrial Stormwater Discharges." Washington, DC: The National Academies Press, 2019. Accessed June 1, 2020. https://doi.org/10.17226/25355.

Royal Dutch Shell, PLC. "Sustainability Report." Shell, 2016. https://reports.shell.com/sustainability-report/2016/servicepages/download-centre.html.

Satija, Neena & Collier, Kiah. "Boomtown, Flood Town." TEXAS TRIBUNE & PROPUBLICA (Dec. 7, 2016). https://projects.propublica.org/houston-cypress/.